

CLAIMS

The invention claimed is:

- 5-5 1. A computer-readable medium having computer-executable instructions defining:
- an authoring program module accessible by a lesson designer to create a plurality of lessons;
 - each lesson including one or more links to versatile resources for display or play in association with the lesson;
 - 10 each resource stored in memory and independently retrievable for display or play in association with multiple lessons;
 - one or more runner program modules accessible by lesson takers for running the lessons; and
 - a relational database accessible by the runner program modules and
 - 15 containing information for retrieving desired resources for display or play in association the lessons;
2. The computer-readable medium of claim 1, wherein:
- each lesson comprises a plurality pages; and
 - 20 each page comprises one or more controls defining visual and functional aspects of the page, links to resources, and script instructions defining lesson logic for implementing the page.
3. The computer-readable medium of claim 2, wherein the authoring
- 25 program module comprises a plurality of menu-driven commands that the lesson designer selectively activates to create the pages, add the controls to the pages, link the pages to the resources, and create the script instructions for rendering pages and implementing lesson logic.

4. The computer-readable medium of claim 2, wherein the authoring program module comprises a capture feature for importing screen objects from foreign program modules into a lesson, the capture feature operative to:

interrogate a target screen object to identify one or more screen object controls that are supported by the authoring program module;

render each screen object control within a lesson page to recreate the functional and visual aspects of the screen object controls;

extract one or more screen object bit maps from the screen object corresponding to visual aspects of the screen object that do not correspond to screen object controls that are supported by the authoring program module;

store the extracted bit maps as resources indexed by the relational database; and

create script instructions within the page for combining the screen object controls with the screen object bit maps to recreate the functional and visual aspects of the screen object when running the lesson.

5. The computer-readable medium of claim 1, wherein one or more of the resources are selected from the group comprising a sound file, a video file, and a bit map file.

6. The computer-readable medium of claim 1, wherein:
the resources include first and second resource types for play or display in association with first and second respective communication modes; and

the implementation of the lesson logic by a runner program module synchronizes the play or display of the first and second resource types to create an integrated multi-mode lesson.

7. The computer-readable medium of claim 6, wherein the first communication mode comprises a computer and the second communication mode comprises a telephone.

5 8. The computer-readable medium of claim 1, wherein:

the runner program module resides in a shared folder maintained on a network server;

multiple instances of the runner program module download from the network server to the student workstations upon command;

10 each downloaded instance of the runner program module runs within a memory space maintained on an associated one of the student workstations during a session;

each downloaded instance of the runner program module deletes from the memory space maintained on the associated student workstation upon
15 completion of the session; and

the shared folder functionality is a generally available operating system feature that allows each student workstation to download its associated instance of the runner program module without having software specific to the runner program module previously installed on the runner workstation.

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9. The computer-readable medium of claim 8, wherein each session operates independently of the other sessions.

10. The computer-readable medium of claim 1, wherein a user provides
25 responses to prompts played or displayed as part of a lesson, and an evaluation score is computed based on the user's responses.

11. The computer-readable medium of claim 1, wherein a user provides responses to prompts played or displayed as part of a lesson, and the lesson and associated user responses are stored for subsequent playback and evaluation.

5 12. The computer-readable medium of claim 1, wherein a user provides audible responses to prompts played or displayed as part of a lesson, and the lesson logic progresses in response to detection of an audible response and a predetermined period of silence following the audible response.

10 13. The computer-readable medium of claim 1, wherein:
a user provides responses to prompts played or displayed as part of a lesson that is divided into a plurality of tasks types, each task type comprising similar tasks relating to a common skill; and

15 each task type is configured to selectively run in a demonstration mode in which user responses are not required to prompts relating to that task type, or in a training mode in which user responses are required to prompts relating to that task type.

14. The computer-readable medium of claim 1, wherein:

20 each resource is assigned a resource name;

the resources are subdivided into a plurality of resource types, each resource type comprising one or more similar resources;

each resource type is assigned a resource type name;

25 the resource name and resource type name assigned to a particular resource defines a root path for retrieving that resource from memory; and

the resource name and resource type name for each resource may be retrieved from the relational database and appended together to create the root path for retrieving that resource from memory.

30 15. An apparatus comprising the computer-readable medium of claim 1.

16. A computer-based training system comprising:
 - a computer network defining a plurality of network ports;
 - a lesson server functionally connected to the network, the lesson server storing a plurality of lessons, each lesson comprising a synchronized set of audio and interactive graphical display resources;
 - a plurality of student workstations functionally connected to respective network ports, each student workstation configured to display the graphical display resources of a selected lesson and to receive interactive student responses to these resources;
 - an audio server functionally connected to the network and comprising a plurality of audio ports, each audio port operative for connecting at least one telephone line to the audio server, the audio server configured to play the audio resources of the selected lesson via a selected audio port in synchronism with the display the associated graphical display resources;
 - a plurality of telephone extensions, each associated with and located near a student workstation to allow the student workstation and the associated telephone extension to be accessed simultaneously by a student user;
 - a private branch exchange functionally connected to the audio ports of the audio server by way of a trunk of telephone lines, the private branch exchange configured to selectively connect available lines of the trunk to lines connected to the telephone extensions to connect the telephone extensions to the audio server;
 - upon receipt of a telephone call at the audio server from a telephone extension operated by a student user, the audio server operative to deliver an audible identification number to the student user via the telephone extension; and
 - upon entry of the identification into the student workstation, the computer-based training system operative to use the identification number to associate the network port assigned to the student workstation with the audio port connected to

the associated telephone extension for the purpose of correlating the student workstation with the associated telephone extension.

5 17. The computer-based training system of claim 16, further configured to compute and store a score based on the interactive student responses received during a lesson.

10 18. The computer-based training system of claim 16, wherein:
the audio server is operative to receive interactive audible student responses to the audible resources; and
the computer-based training system is configured to progress the lesson in response to detection of an audible response and a predetermined period of silence following the audible response.

15 19. The computer-based training system of claim 17, wherein:
a user provides responses to prompts played or displayed as part of a lesson that is divided into a plurality of task types, each task type comprising similar tasks relating to a common skill; and
each task type is configured to selectively run in a demonstration mode in which user responses are not required to prompts relating to that task type, or in a training mode in which user responses are required to prompts relating to that task type.

20 20. The computer-based training system of claim 19, further configured to record the student responses during a lesson and to subsequently play back the student responses in connection with the lesson for evaluation purposes.

25 21. The computer-based training system of claim 20, wherein a user provides audible responses to prompts played or displayed as part of a lesson,

and the lesson logic progresses in response to detection of an audible response and a predetermined period of silence following the audible response.

22. A computer-based training system, wherein:

5 a lesson is divided into a plurality of tasks types, each task type comprising similar tasks relating to a common skill;

a user provides responses to prompts played or displayed as part of the lesson; and

10 each task type is configured to selectively run in a demonstration mode in which user responses are not required to prompts relating to that task type, or in a training mode in which user responses are required to prompts relating to that task type.

23. The computer-based training system of claim 22, further configured
15 to record the student responses during a lesson and subsequently play back the student responses in connection with the lesson for evaluation purposes.

24. The computer-based training system of claim 22, further configured
20 to compute and store a score based on the interactive student responses received during the lesson.

25. A computer-based training system in which a user provides audible responses to prompts played or displayed as part of a lesson, and the lesson logic progresses in response to detection of an audible response and a predetermined
25 period of silence following the audible response.